



MS AF  
PATENT  
4001-1196

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of

Reinhard GABL et al. Conf. 6903

Application No. 10/521,736 Group 2858

Filed September 21, 2005 Examiner Amy He

DEVICE AND METHOD FOR DETECTING A SUBSTANCE

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

MS AF  
Assistant Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

March 10, 2008

Sir:

Appellants request a pre-appeal brief review of the final rejection in the above-identified application. No amendments are being filed with this request.

A Notice of Appeal is filed herewith.

The review is requested for the reasons advanced on the attached sheets.

Respectfully submitted,

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REASONS IN SUPPORT OF REQUEST FOR REVIEW

Claims 1, 2 and 4-23 are pending. Claim 1 is the only independent claim and is the subject of the present pre-appeal brief review.

Claim 1 was rejected under 35 USC 103(a) as being unpatentable over POTYRAILO et al. 6,684,683 in view of HAGER et al. 4,783,987 and further in view of EDA et al. 5,747,857.

The Examiner offers POTYRAILO as disclosing each of the recited features except for the device of POTYRAILO detecting a liquid and that a piezoelectric layer is a polycrystalline piezoelectric layer.

However, the Examiner makes a first clear factual error in that POTYRAILO fails to disclose that a resonance frequency of the oscillation is from 500MHz inclusive to 10GHZ inclusive for thickness shear mode oscillation.

There is no factual support for the Examiner's position and rather, it is clear that column 4, lines 1-3 of POTYRAILO disclose a frequency of about 0.1 to about 70 MHz for thickness shear mode (TSM). The higher frequencies disclosed by POTYRAILO are for surface acoustic wave (SAW) or surface transverse wave (STW). POTYRAILO does not disclose that a resonance frequency of the oscillation is from 500MHz inclusive to 10GHZ inclusive for thickness shear mode oscillation.

In addition, as set forth above, the Examiner recognizes that POTYRAILO fails to disclose detecting a liquid.

HAGER is offered for this feature with the Examiner concluding that it would have been obvious to modify POTYRAILO to detect a liquid instead of a gas to obtain information about the density and viscosity of the liquid.

However, the Examiner makes a first clear legal error in that the proposed modification would add unnecessary complexity to the device of POTYRAILO and may make the measurements of POTYRAILO impossible to determine.

The Federal Circuit has held that "[t]he consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art." *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). Emphasis added.

The purpose of POTYRAILO is to determine the barrier properties of an array of coatings on an acoustic device. If POTYRAILO also has to determine information such as viscosity and density of a liquid covering the coated acoustic device, the complexity of such measurements would increase. This is true not only because additional information is required, but also, because the viscosity and density measurements would affect the measurements of the barrier properties of the coatings, which might possibly make the measurement of the barrier properties impossible. Thus, in view of the added unnecessary complexity

and with an unknowable likelihood of success, it would not have been obvious to make the proposed modification and concluding otherwise is a clear legal error.

The Examiner further recognizes that both POTYRAILO and HAGER are directed to monocrystalline piezoelectric devices and offers EDA for the teaching of a polycrystalline piezoelectric layer.

However, the Examiner makes a second clear legal error in using the teachings of EDA to result in a polycrystalline piezoelectric layer for the purpose of achieving a high frequency above 1 GHz.

Column 5, lines 50-55 of EDA, offered by the Examiner in support of the combination, is directed to the prior art of EDA and discloses the use of a polycrystalline piezoelectric member. In the preceding passage (column 5, lines 39-49) and subsequent passage (column 5, line 56 to column 6, line 23) of EDA, the disadvantages of using a polycrystalline device including the impossibility of determining the accuracy required by EDA is set forth. Thereafter, EDA describes the invention of EDA as a single crystalline device (column 6, lines 33-38) including using such single crystalline device to perform oscillation above 1 GHz. (Column 6, line 66-67).

EDA does not provide motivation for using a polycrystalline piezoelectric layer. Rather, the motivation

offered by the Examiner is based on a single crystalline substrate.

Moreover, any disclosure in EDA related to a polycrystalline piezoelectric layer is disparaged by EDA and thus, EDA teaches away from using a polycrystalline piezoelectric layer in favor of a single crystalline layer. As EDA does not provide the motivation or suggestion to make the proposed modification, combining EDA with POTYRAILO and HAGER is a clear legal error.

Accordingly, the rejection of claim 1 includes a factual error, or in the alternative, clear legal errors.

The dependent claims are patentable at least for depending from an allowable independent claim.

In view of the above, it is apparent that the rejections of record include clear legal and/or factual errors and cannot be sustained and must be reversed, and such is respectfully requested.